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Physicochemical, organoleptic and molecular analysis of two varieties of peach within the protected designation of origin (DOP) “Calanda” during storage at different temperatures

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The peach cultivar “Calanda” from the Bajo Aragon region in Spain with a protected designation of origin (DOP) is a much appreciated cultivar by European consumers and dominates the late-season fresh market due to its distinct characteristics. The increase of shelf-life of this cultivar is currently pursued through novel storage techniques and breeding for better post-harvest quality of the fruit. Fruits’ quality problems, together with losing competitiveness have driven the development of breeding programs for better fruit quality. Changes during maturity and post-harvest storage at various temperatures were characterized in two late-season “Calanda” varieties with different harvest time and the relationship between biochemical and molecular parameters during storage at low temperatures was established. qRT-PCR analysis of peach samples under different post-harvest treatments showed differential transcription levels of genes on pathways related to fruit shelf-life. These results are a first glimpse of peach transcriptome activity under chilling injury when using different post-harvest treatments and could be extrapolated to other crop species in the Rosacea family.

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